Scientific experiments of water harvesting

†3685. SHRI RAJ MOHINDER SINGH MAJITHA:
SHRI RAVI SHANKAR PRASAD:

Will the Minister of AGRICULTURE be pleased to state:

(a) whether it is a fact that research scientists of the country have been successful in their scientific experiments for water harvesting and for its use in agriculture;

(b) if so, the facts thereof and the details of experiments and the time when the first successful experiment was conducted in the country;

(c) whether any arrangements have been made to help the farmers to access this research; and

(d) if so, the details thereof?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (PROF. K.V. THOMAS): (a) Yes, Sir.

(b) The ICAR through its research institutes has been engaged in undertaking research experiments on water harvesting since 1954 with the establishment of a dugout pond at Dehradun. Since then, experiments to develop location specific water harvesting technologies have been undertaken for different agro-climatic, soil and physiographic conditions in the country. The experiments were conducted on:

- *In situ* moisture conservation and harvesting through agronomical measures such as contour farming, strip cropping, tillage practices, mulching, vegetative barriers, etc. and mechanical measures such as contour bunding, graded bunding, bench terracing, conservation bench terracing and conservation ditching etc.
- Surface runoff collection through open areas and storage in ponds and underground tanks.
- Flood water harvesting from ephemeral streams and springs and its storage in sub-surface dams, small earthen dams and on-stream ponds.
- Recharge of runoff into ground water.

(c) Yes, Sir.

(d) The Council is engaged in dissemination of water harvesting technologies generated through its institute operational research projects, Institute Village Linkage Programmes, Integrated Wasteland Development Programmes and National Watershed Development Programmes for Rainfed Areas since late 1970's. Water harvesting forms an integral component of all participatory watershed development programmes. For example, the concept of water harvesting was demonstrated successfully by Central Soil and Water Conservation Research and Training Institute (CSWCRTI), Dehradun in Sukhomajri watershed project in foothills of Shiwalik. Motivated by its success, the Govt. of India and many State Governments have launched

†Original notice of the question was received in Hindi.

programmes for replicating it in their respective states. The various institutes of Council located in different agro-climatic regions of the country disseminate their research findings to State Governments, through research reports, publications, bulletins and leaflets in local languages.

Impact of climatic change on agriculture

*3686. SHRI RUDRA NARAYAN PANY: Will the Minister of AGRICULTURE be pleased to state:

(a) whether 'climate change' has started affecting agricultural production of the country;

(b) if so, the details thereof of the last three years; and

(c) the measures being contemplated by Government to tackle this serious problem?

THE MINISTER OF STATE IN THE MINISTRY OF AGRICULTURE (PROF. K.V. THOMAS): (a) and (b) The agriculture production especially for foodgrains increased in the past three years which is evident from the following.

Year	Target (million tons)	Achievements (million tones)
2006-07	220.00	217.27
2007-08	221.50	230.77
2008-09	233.00	233.87

(c) During Eleventh Plan the Indian Council of Agricultural Research has initiated research project to monitor climate change impacts through a network project entitled National Project on Climate Change (NPCC) involving State Agricultural Universities and ICAR Institutes. Under this project, Climate change impacts on rice, wheat, pulses, horticulture, livestock and fisheries are being studied. The measures contemplated by the Council consist of both (i) Mitigation strategies like advancing dates of sowing of kharif crops, conversion of C3 plants to C4 in rice, methane emission reduction in livestock, shelter management, promotion of resource conservation strategies, and better utilization of weather forecasts in crop production, and (ii) The Adaptation strategies to develop short duration and temperature tolerant crop varieties during rabi.

In addition to the above initiative of ICAR, the Government of India has prepared the National Action Plan on Climate Change (NAPCC) under which 8 national missions are formed to address the impacts of Climate Change on agriculture, energy and water resources.

Famine situation in country

†3687. SHRI Y. P. TRIVEDI: Will the Minister of AGRICULTURE be pleased to state:

†Original notice of the question was received in Hindi.